

# **T** News Letter **TDARS**

G3ZME  
G6ZME

**TELFORD AND DISTRICT AMATEUR RADIO SOCIETY**

[www.TDARS.org.uk](http://www.TDARS.org.uk)

FOUNDED 1969

[www.TelfordHamfest.co.uk](http://www.TelfordHamfest.co.uk)

Issue 288

*50th Anniversary 1969-2019*

April/May 2019

[www.TDARS.org.uk](http://www.TDARS.org.uk)

## *Programme*

[www.telfordhamfest.org.uk](http://www.telfordhamfest.org.uk)

- April 10** Contest, Portable and Marconi (IMD) planning for 2019
- April 17** Workshop Stations Evg: 'Scopes, Antenna analysers, multimeters etc
- April 24** Speaker—Dave Wilson M0OBW, President RSGB (Very busy man !)
- April 26-28** *International Marconi Day (27th) at Tywyn, Wales. I/C John M0JZH*
- May 1** Committee Meeting and GX3ZME on the air.
- May 8** Surplus Sale. 10% to club funds i/c M0KZB
- May 11-12 (weekend)** Kite & Ballon Festival, Telford Town Park GB50TEL
- May 15** The Modern Am. Radio Shack, CAT & Data. M0JZH, M0PLA, M0TBQ
- May 22** Direction Finding (DF) Demo & preparation meeting.
- May 29** Local walking DF Hunt #1. Start LWVH at 7:30pm
- June 5** Committee Meeting and GX3ZME on the air. (7:30pm CM)
- June 12** 6 metre Trophy preparation meeting + Social
- June 15-16 (weekend)** *50MHz Trophy Contest from Long Mynd (i/c G0UFE)*
- June 19** HF on the Village Field—try to contact ON/M0PLA in Belgium
- June 26** VHF NFD Preparation evening. i/c G0UFE / G3UKV
- July 3** Local walking DF Hunt #2. Start LWVH at 7:30pm (note: 1st in month)
- July 6-7 (weekend)** *VHF NFD from the Long Mynd IO82NN i/c G0UFE*

*For Amateur Radio Exam Training—enquiries to Mike G3JKX (01952 299677)  
For Morse Training and Morse Proficiency Tests Martyn G3UKV or Eric M0KZB.  
For Equipment Loans & Returns contact Don M0TBQ.*

Radio Amateur Exams- Latest: [www.tdars.org.uk/html/training.html](http://www.tdars.org.uk/html/training.html)

VILLAGE HALL, MALTHOUSE BANK, LITTLE WENLOCK, TELFORD, SHROPSHIRE, TF6 5BG

## Editorial

Finally, welcome also to the Committee to Ian Pipe M0IRP as an 'ordinary member' - it's always good to have one or two new faces joining the committee to inject a bit of freshness to the group. I think we can look forward to a worthwhile and progressive 51st. year at TDARS.

**MIV**

~+~+~+~+~+~+~+~+~+~+~+~+~+~+~+~+



## WIND DESTROYED ANTENNA?

**My suggestion: “Women’s equality? Father Christmas ? — Bah, humbug.” MIV**

~+

**TELFORD & DISTRICT AMATEUR RADIO SOCIETY : 2019-20**

**CHAIRMAN:** Simon Bird G0UFE (01952 240286)

**VICE-CHAIRMAN:** Martyn Vincent G3UKV (01952 255416)

**SECRETARY:** John Humphreys M0JZH (07824 737716)

**TREASURER:** Paul Athersmith M0PLA (07966 969230)

**CURATOR :** Don Nicholls M0TBQ (01952 411680)



**NEWSLETTER EDITOR:** Martyn Vincent G3UKV (01952 255416 or 07421 001166)

**PUBLICITY/WEBMASTER :** Dave GOCER (01630 638699 or 07971 416940)

**Committee:** Brian G6UDX; Graham G7LMF; Ian M0IRP; Village Hall Committee Liaison officer Martin 2E0TRO.  
QSL Manager Paul M0PNN; Assist Curator: Chris 2E0EOH; Trophies/Certs: Martyn G3UKV.

# ***Qtc: News & Information***



**TDARS MEETINGS EVERY WEDNESDAY AT LITTLE WENLOCK VILLAGE HALL UNLESS INDICATED OTHERWISE ON THE FRONT PAGE PROGRAMME. ROOM BOOKED FROM 7PM - 10PM. MEETINGS USUALLY COMMENCE AT 8PM**

**Please note: A current membership card may be required to borrow TDARS equipment. Please return borrowed equipment promptly .**

**The annual Telford Hamfest and G-QRP Convention** will take place on Saturday/Sunday August 31st and 1st September 2019. As reported last Newsletter, the **42nd Telford HamFest** takes place at Harper Adams University on the 1st. September 2019.

However, there has been a further development:

The **Buildathon and G-QRP Social** arranged for Saturday (August 31st) evening was expected to take place at the same hotel as last year (Park Inn, Telford), but apparently it is due to be closed for a major refurbishment later in the year. So after careful consideration the Committee, with the agreement of G-QRP officials, have decided to also hold this half of the weekend events at Harper Adams University. There is a large classroom area available for the Buildathon to take place under the guidance of Steve G0FUW (Chairman of G-QRP) and Heather and Paul (M0HMO, G8AQA), and a range of refreshments will be available provided by HAU. Good standard overnight accommodation is also available, with single and double rooms all available for our visitors. It is a bit of a whammy to re-locate both the Buildathon and the HamFest in the same year, but on balance it was decided that with careful planning and members' support, this would be beneficial to all concerned. For those of you who are members of G-QRP and receive the quarterly SPRAT magazine, further details will appear in the next Summer edition as well as on their website. Our own 'TelfordHamfest' website will also be updated in due course.



At the **AGM, various trophies were awarded** as follows:-

**Under-a-Fiver construction** ( Feb. 27th) won by Paul M0PNN for his Morse Keyer project.

**Main Construction Competition** (March 13th) won by Heather M0HMO HF Swiss Army Knife 'Buildathon' project.

**Beginner's Construction** project (March 13th) Paul M0PLA and his Multi-meter Calibration Test Set.

**Direction Finding Series** (Summer 2018) Martyn G3UKV

**Jack Hassall Trophy** for services over the past year won by Eric M0KZB

**Syd Poole Trophy** for operating over the air in the true spirit of Amateur Radio—Hazel Wakenell received the trophy on behalf of her late husband Jim G8UGL (SK). A polished silver salver was also presented for Hazel to keep, with the inscription

***"Jim Wakenell G8UGL A real treasure to the club who will always be remembered"***

Finally, the **Kippure Trophy** (wooden spoon) - no nominations, although a certain member said he was holding his breath and crossing all his fingers after a certain event during the past year !

Various AGM photos follow this page.



telfordhams

**Subs for 2019-2020** now due. Normal subscription £30, non-earners £24.

Cheques payable to "TDARS" or cash to Paul M0PLA, Hon. Treasurer. At the AGM, Paul pointed out that the subs don't even cover all the club's costs (rent, insurance, power etc) so it is vital that the HamFest continues. Jim's (G8UGL) donation of the two almost-new VHF/UHF amplifiers which were subsequently sold boosted funds 2018-19 very considerably, so that overall TDARS funds are in good shape.





Photo:  
M0TBQ

Paul M0PNN receives his Under-a-Fiver Trophy

## HOME CONSTRUCTION STILL ALIVE !

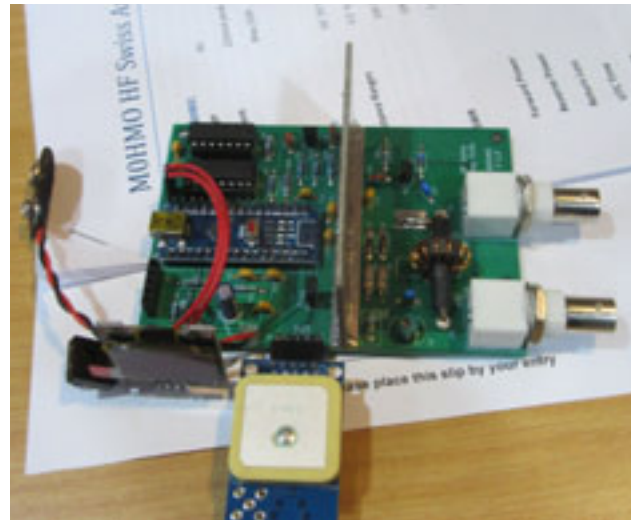


Paul's M0PLA test set and multimeter: Beginner's Trophy winner



David's (M0YDH) impressive multiband Digital ATV system after 2+ years of development.

**Below:** Some of the audience being 'digitised' with David's DATV transmit/receive system



Heather's M0HMO winning "HF Swiss Army Knife" Buildathon 2018 project. kit.



Photo:  
M0RJS

Martyn G3UKV brought his 'Portsdown' project to the event.

**Thanks for Newsletter input this time:  
Mike G3JKX, Paul M0PLA, Robin G1MHU, Don M0FHM, Eric M0KZB,  
Bob M0RJS, Don M0TBQ, Dave G8VZT**

**Next edition June/July : 2019  
Please keep it coming—contributors make the difference!**

## Mike's Piece: April 2019

### Calculating Field Strength. (to satisfy the Health & Safety people)

**The formula is..... $FS = 7 \sqrt{ERP/d}$**

This formula is of dubious accuracy, to say the least.

Firstly the figure 7 should be  $\sqrt{50}$ , so the answer is not going to be that accurate.

Secondly, it is only valid if the transmitting source is a infinitely small point, which is impossible and the FS measured in a total vacuum.

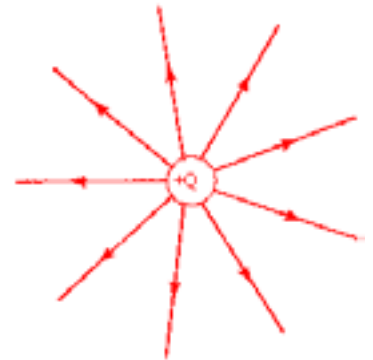
That would make taking measurements a bit difficult. Unfortunately, the presence of the measuring instrument and the fact that someone is there operating it, will also affect the results.

However, this formula is the best we can do !

FS is measured in Volts per Metre at a distance (d)

(Radios need aerials! Only moths butterflies and other bugs have antennae)

Distance away 'd' from the aerial is in metres and, as it is below the line in the formula, as d gets larger when you go further away from the aerial, so the Volts per metre gets smaller; a linear function. That means double the distance away from the aerial and the FS halves.



Remember that FLUX DENSITY is a NON - Linear function.

Now for some legal cheating !

The formulas for 2 resistors or inductances in parallel are a pain to do with a calculator.

Also capacitors in series.

Instead, use  $R1 \times R2 / R1 + R2$ . Similarly with inductances use  $L1 \times L2 / L1 + L2$ .

Capacitors in SERIES can use the same trick using  $C1 \times C2 / C1 + C2$

The resonant frequency formula is  $f = 1/2\pi\sqrt{LC}$  where L has to be in Henries and C in Farads.

A real pain. This means lots of ten to the minus goodness knows what. Yuck.

Below is the exact same formula, but made a lot easier by having some of the maths already done. This allows L to be entered in  $\mu\text{H}$  and C in pF, and gives the answer in MHz! (values mostly used by hams) Seems unbelievable but true.

$$f(\text{MHz}) = \sqrt{25330.3/L(\mu\text{H}) \times C(\text{pF})}$$

You simply multiply LuH x CpF and divide this into 25330.3. Then take the square root. Really easy. This formula comes courtesy of the ARRL Handbook, is accurate and very quick to do.

Do try these alternate formulas if your calculator skills are, shall we say, rusty.

**73 Mike G3JKX**

+~+~+~+~+~+~+~+~+~+~+~+~+~+~+~+~+



**Hazel receives a silver salver at the AGM in memory of Jim G8UGL (SK 19 Aug. 2018)**





## More TDARS items. . . .

There are several **TDARS 50th Anniversary** events and orders coming up, and some orders have been placed. For example, here's the **new banners** that have just arrived:



**Anniversary mugs** (the drinking sort) are also going to be available, similar to those purchased at 25 and 40 years. Dave GOCER has started his own embroidered garments business, and has started to take orders for **sweat shirts, tee shirts, fleeces etc** at competitive prices, with, or without your name/callsign woven beneath the club Phoenix logo.

A **Golden Anniversary Meal** is planned to take place some time in the autumn after the HamFest at a suitable local restaurant. As many past, present and potential TDARS members and their guests as possible will be invited—mirroring the meal that took place in 1994 at the Wrekin View at Dawley Bank.

The **Special Event Station (SES) GB50TEL** has been allocated to the club for the year, and this will be aired from time to time during 2019—the first opportunity being the T & W Balloon & Kite event in May (11th, 12th). If you wish to use this SES at an appropriate event, contact John M0JZH for details.

The Committee would welcome any further suggestions for practical ways to celebrate our 50th.

Various **contest results from 2018** have been published. The most popular RSGB contest series of all was the **UKAC series** with 732 individual entries during the year, covering 6m, 4m, 2m, 70cm, 23cm, 13cm, 9cm, 6cm and 3cm bands. Telford members had entries for all 9 bands ! We came 13th overall out of 35 'local clubs'.

Other contests included the **50 MHz Trophy** (5th of 13 in the Open section) and **VHF NFD** where we came 4th of 13 in the 'Mix and Match' section.

On the **microwaves**, **G3ZME/P** had a strong presence on all bands up to 24 GHz. For example 6th in the 10GHz Trophy in May using **G3Z Contest Call**, runner-up on 5.7GHz (6cm), and 5th on both the 10GHz and 24 GHz Championships series.

Some individuals also had success using their own personal callsigns on a range of bands and modes. This year's contests have already started, so why not have a go? There is plenty of expertise in the club, so just ask if you need some guidance in operating and available software.

One of the founding members of the Society—Wrekin A.R.S as it was originally—has passed on at the grand age of 92. **George Shepherd, G8BKH** who lived on the Dawley Road in Wellington, died on Friday 22nd February 2019. He had not been active in recent years, but his earlier radio exploits were mentioned in the eulogy at his funeral, and he took an interest in the activities of TDARS over many years. He has been added to the long list of Silent Keys (SK) on the club's website.



## From the past . . . .

AGM March 2009



Field Day: July 2010  
One group relaxing . .



[Screen Print version from an Excel File. Tricky !! Contact Robin for more details—Ed]

### G1MHU Fan Dipole Calculator (Converting to Feet and Inches for USA)

Stage 1 Dipole Calculation					Stage 2 - build it and then measure with antenna analyzer or SWR meter and low power wideband rig				
Constant =	143	Total Length Metres	Length per side (Metres)	Convert to Feet and inches (1/12 is one inch)	Resonant frequency measured with analyzer	New Calculated constant	Recalculate length per side with new constant	Lengthen or shorten each side by (Metres) Positive is lengthen, -ve is shorten	Convert to Feet and inches (1/12 is one inch)
Frequency (MHz) band 1 =	3.9	36.67	18.33	60' 2/12	3.9	143	18.33	0.00	0
Frequency (MHz) band 2 =	7.15	20.00	10.00	32' 10/12	7.4	148	10.35	0.35	1' 2/12
Frequency (MHz) band 3 =	14.2	10.07	5.04	16' 6/12	14.8	149	5.25	0.21	8/12
Frequency (MHz) band 4 =	18.1	7.90	3.95	13	19	150	4.15	0.20	8/12
Frequency (MHz) band 5 =	21.2	6.75	3.37	11' 1/12	22	148	3.50	0.13	5/12
Frequency (MHz) band 6 =	28.4	5.04	2.52	8' 3/12	27.4	138	2.43	-0.09	-3/12

^^ Use this value if you are working in Metric, don't forget to add some spare wire

^^ if working in Imperial measurements, Cut each dipole leg to this length, don't forget to add some spare wire

^^ Enter the frequency where the antenna SWR is lowest

^^ Lengthen or shorten by this amount

^^ this is how much to lengthen or shorten each wire by (foldback)

Cell Key	Enter into these cells
	Calculated Cells
	Metric Values
	(inches)

Inverted V?? 143 is the Dipole Constant for a half wave dipole, working on a 95% velocity factor for copper wire.  $V = f/\lambda$  you may want to lower it by up to a further 5% if you are making an inverted V configuration instead of a flat top (136).

Use 5% for 45 degrees	135.85
Use 4% for 37 degrees	137.28
Use 3% for 30 degrees	143.97
Use 2% for 22 degrees	140.14



**Fan (multiband) dipoles seem to be Flavour of the Month, and Robin has kindly sent his Excel Spreadsheet calculator for up to 6 bands.**

[illegible]

**E-mail from Eric M0KZB just a few days before the TDARS AGM:-**

Hi all,

As you are aware by now, I am stepping down as Chairman of TDARS, I would just like to say a very big thank you to all of you who have backed me over the last four years. TDARS is a very busy club and dabbles in most, if not all aspects of the Amateur Radio spectrum. TDARS must be ranked as one of the friendliest clubs, that I have ever had the pleasure to be chairman of (twice). A lot has to be said of the active members of our club who voluntarily and freely give up their valuable time to make the club the successful club it is today. Needless to say, it is not unusual to find that most of those active members are on the committee. So I would like to thank the committee for all the hard work they do for the club in the background. Just remember, when the club calls for volunteers, the aforesaid members have probably already volunteered, so consider it important to help others, help you, after all (as I keep saying) it's your club and you are the benefactors. Do not lose sight of the fact that it is good to take a light hearted look at most things. We pride ourselves on having the freedom to banter, if, and when appropriate, after all, it's part of who we are. Lastly, but certainly not least, I would like to say a very big thank you to Martyn G3UKV who has been the lynch pin of this club for very many years, as Vice Chairman he has always been there for advice, and to bounce things off when the need arises. Being an ex-headmaster is a literary bonus too.

**Best wishes / 73. Eric Arkinstall M0KZB.**



## ***End Fed Half Wave vertical for 30 and 20 metres—By Paul M0PLA***



“ Hi All

The other week I brought along with me an EFHW which I am in the process of building ready to take with me to Germany later in the year for SOTA work, I have attached a few photos of the finished item with a few shots of the Analyzer screen. I think it looks ok to me. “

[illegible]

### 3 *Element 2 metre Portable Yagi* — By Paul M0PLA



For those of you that are not on Facebook and can't see my posts on the SOTA group and other places that I post, I will add details of the antenna that I use on the mountains.

It is a Homebrew 2M Yagi made from the following:

20 mm electrical plastic conduit for the boom.

A 20 mm plastic conduit T piece to allow the boom to join the mast.

A 20 mm to 25 mm adapter (the mast is 25 mm).

Two short lengths of 25 mm plastic conduit joined with a 25 mm conduit joiner.

A tent pole section (this is the spike I use to hold the mast).

5 mm solid aluminium rod cut to length for the reflector, feed point and director.

RG 58 Coax for the feed line with a balun i.e. a few turns of the coax to prevent nasty's coming back to the rig.

A pair of crocodile clips to allow the coax centre and braid to connect to the 5 mm rod (feed point).

I have attached a few photos and I have also entered the details into MMANA GAL so you can see the performance. I know it works well and after my last facebook link of this week-ends SOTA Activation I have had a lot of people asking about its specification.

If anyone wants to make one and needs my help I am always willing to help. MOPLA Paul Athersmith 73's.

